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Paradigm shifts in northern art, community and environment studies for art teacher education☆

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ABSTRACT

In Northern Finland, where this study takes place, nature is a typical setting for recreational activities and employment. At the University of Lapland, attention has been given to art teacher education that supports the continuation of the Northern ecoculture and enhances human–nature connectedness. In this article, we discuss art, community and environmental (ACE) studies developed through international collaborations and joint, long-term action research based on the arts. These studies are part of art teacher training and an international master's degree programme in Arctic art and design. This article explains the paradigm changes that have impacted the aims and methods employed in ACE studies since the 1990s. The discussion is framed by a Western theoretical shift from environmental aesthetics to new materialism, post-humanism and decolonisation. We conclude that ACE projects can enhance revitalisation and increase capacities to retain cultural pride and local ecocultures. Art education that is carried out in a place-specific manner, in cooperation with local communities, is one way to keep traditions alive and foster environmentalism in the North. The article has international relevance for developing art teacher training in Arctic communities but also in other remote locations in which strong bonds between nature and culture are maintained.

1. Introduction

Since the 1990s, dialogic and pedagogic approaches in international contemporary art (Kantonen, 2010; Kester, 2004) have inspired art teachers and educational researchers to seek strategies that take students outside the classroom, whilst paying attention to the strengths of communities and local places, including their cultures, histories and resources (Hiltunen, 2009). In this article, we analyse paradigm shifts occurring in art teacher training in Northern environments and communities in Finland. Recent educational studies have considered nature's materiality in a multisensory and interactive manner, for example, recognising the key role it plays in an Arctic resident's childhood (Rautio & Stenvall, 2018) and in art teacher education. At the same time, anxiety caused by environmental crises has been recognised globally (Ojala, 2012, 2016; Pihkala, 2017, 2018; Searle & Gow, 2010), thus leading to calls for educational responses. Our approach to art education involves an optimistic view of the opportunities it can present for effecting changes that support more sustainable societies (see also Dewenhurt, 2014; Freire, 2005; Garber, 2004). In other words, we see art education as essential to transformative education for achieving sustainability (Lin & Oxford, 2011; Salonen & Siirilä, 2019).

In general, teacher education in Finland is a highly competitive field requiring master's degree university studies, which are provided in higher education institutions across the country. However, art teacher education, specifically, is only offered at two universities: Aalto University in the southern part of Finland, Espoo, and the University of Lapland, Rovaniemi, Finnish Lapland. This article discusses the nature and role of art, community and environmental (ACE) studies as part of the paradigm shifts in art teacher training and the international Arctic Art and Design master's degree programme at the University of Lapland. Long-term international collaboration has been carried out within the Arctic Sustainable Art and Design (ASAD) network of the University of the Arctic to promote educational development and enhance ACE studies for sustainability in the Arctic region. Since 2012, when the ASAD network was established, Arctic educational institutions in the fields of art and design have collaborated on field work, exhibitions, research seminars and publications, focusing on pedagogical solutions facing contemporary global and local challenges (Jokela & Coutts,

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2018).

This article is based on a long-term development study carried out under the ACE studies programme offered through the University of Lapland's Department of Art Education in cooperation with the ASAD network. The ACE programme is offered to students as a minor programme of study and is commonly integrated into art education studies and master's thesis courses. ACE studies have adapted the strategies and methods of community and environmental art, place-based pedagogy and project learning under the lead of professors Timo Jokela, 2018, two of the authors of this article, since the 1990s (Hiltunen, 2008, Hiltunen, 2009). ACE projects have been implemented as part of collaborative development work conducted by Finnish students of Art Education master's degree programme and international students in the Arctic Art and Design master's degree programme in the University of Lapland and members of local communities.

Strong human–nature relationships are typical in Northern communities throughout the Arctic region (Ingold & Kurttila, 2000; Tolvanen et al., 2020; Valkonen & Valkonen, 2014). In this article, we review art education and community art development in the contexts of art teacher training, environmental and cultural education, global environmental crises and local ecocultures in the Northern and Artic regions. We use the term *local ecoculture* to refer to cultural traditions, such as berry picking, hunting, recreation and crafting from natural materials, that generally take place in nature. Moreover, many livelihoods, such as employment in the forest industry and tourism, rely on nature and are interwoven into the local ecoculture in Northern Finland, where this study takes place. The relation to nature is based on interactions with and the use of nature's resources: environmentalism that focuses on protecting nature is not as common in Lapland as it is in Southern Finland. Art and environmental education situated in the outdoors is associated with a joyful relationship with nature and the objective of developing educational practices related to the ecoculture and Indigenous cultures (i.e. the Sámi culture in Lapland). In this article, we delve into the relationship between art and environmental education and look into the debates that have been ongoing since we entered the 21st century concerning the new materialism (Fox & Alldred, 2019; Gamble & Hanan, 2019) and sustainability education (Jickling & Sterling, 2017; Lin & Oxford, 2011; Salonen, 2019) from the perspective of art education.

The authors of this article have been developing the ACE programme through an art-based action research (ABAR) approach, which is a research strategy that combines artistic practices with development research in the fields of formal and informal education, regional development and community empowerment (Jokela, 2019; Jokela et al., 2005; Jokela et al., 2015a,b; Jokela et al., 2019). ABAR is implemented to develop the professional methods and working approaches of the artist–teacher–researcher. In the field of educational research, ABAR has enhanced sustainability through art education (Jokela & Coutts, 2018; Jónsdóttir, 2017, p. 355), integration in culturally diverse communities (Hiltunen et al., 2020) and cultural sustainability (Härkönen & Stöckell, 2019; Härkönen & Vuontisjärvi, 2018; Jokela, 2019). The ethics of ABAR have been considered, and long-term commitments to communities have been emphasised (Härkönen, 2019; Hiltunen, 2009; Huhmarniemi, 2019a; Juhola et al., 2020). International collaboration in the Arctic has focused on revitalisation (Huhmarniemi & Jokela, 2020a,b), while in other parts of Europe collaborative efforts have concentrated on enhancing methodologies in art education and art teacher training (Manninen, 2019, 2020).

The ABAR strategy guides research progress in the cycles of aim setting, interventions and evaluations (Jokela, 2019; Jokela et al., 2015a,b, 2019). Theories and philosophical paradigms have an impact on aim setting at the beginning of each cycle and on conceptualisation at the end of the cycle. Art is implemented as a catalyst for major changes, including community empowerment, informal learning, transformation towards sustainability and better practices in art teacher training. ACE studies have also been a central target of these development efforts.

The ABAR strategy shares some common features with international art-based research (Barone & Eisner, 2012; Leavy, 2009, 2017, 2018), art-based educational research (Sinner et al., 2019), artistic research (McNiff, 2013) and action research (Kemmis & McTaggart, 2004). In these explorative approaches, practical and theoretical research are conducted simultaneously, and the topics under examination are situated in the middle ground between art and other fields of research, such as social sciences and educational studies. ABAR is especially rooted in process-oriented dialogical and place-specific art forms, such as environmental and community art and community-based art education. Such an approach has been implemented extensively in the field of community-based art education and in multicultural communities in Lapland (Hiltunen, 2009; Jokela, 2019; Jokela et al., 2019). Stakeholders and community members have actively participated in the research processes. The visual documentation of these processes and the artworks created, which illustrate experiences and symbolise value transformations, have also been used as research data, together with participatory observations and interviews. Typical of arts-based research (Jónsdóttir et al., 2018; Leavy, 2009), art has boosted non-verbal knowing and knowing with nature.

For this article, the authors analysed prior research conducted since the 1990s and students' theses in order to reflect on changes in focus and principles related to the global paradigm shift (e.g. new materialism and post-humanism; Ferrando, 2013), which are currently discussed in educational studies (Datta, 2016; Flynn & Reed, 2019; Rautio & Stenvall, 2018). We gathered data through photo documentation, published research articles, doctoral dissertations, and master's theses. Photographs have been taken with the consent of the participants, and consent forms for research and documentation have been completed for participants or their caretakers when working with children and young people. The aim of our analysis was to identify how paradigm shifts in contemporary theory have impacted ACE studies. In addition, this evaluation and reflection was conducted with the intent to motivate and direct subsequent cycles in the long-term research agenda.

The authors of the article have diverse positions related to the research subject as insiders in local ecocultures, the main developers of ACE studies and initiators of international collaborations. One author, Maria Huhmarniemi (2016, 2018), has focused on Nordic collaborations and contemporary art as an intervention in environmental conflicts in Lapland. Mirja Hiltunen (2009, 2011, 2016), Hiltunen et al. (2020) has developed community-based art education for more than 20 years as part of art teacher training, such as in the context of intergenerational interactions and participation, including within the Sámi culture. Timo Jokela (1997, 2008, 2016) has developed and promoted various environmental education methods derived from environmental art since the 1980s, has led ASAD-network and a number of large-scale international art and art education development projects and has conducted research on ACE studies.

2. Cases: from northern landscapes to the agency of nature

In the 1990s, Jokela led a series of thematic studies on the Northern landscape focused on rivers, fells (mountain-like structures) and the Arctic Ocean (Huhmarniemi, 2019a). These studies involved international, interdisciplinary and multidisciplinary summer schools, field trips, workshops, exhibitions, seminars, publications, ACE studies and master's theses completed by art education students.

The River Project (1994–1995) explored the environment and community of the Ounas River (Fig. 1). The river was studied as a place complete with physical nature, narratives, beliefs and lived experiences. Issues of natural exploitation, such as hydropower producing dams, were also covered. The highlight of the River Project was a performance and a 200-km journey on a wooden raft along the river at the time of the annual spring flood. The Fell Project in 1997 and the Arctic Ocean Project in 1998 each supported an international multidisciplinary summer school as the core activity. The Levi Fell was examined through

Fig. 1. Wooden raft, part of 1995 river Project
Source: Timo Jokela

art and cultural studies conducted by participants, including international and local artists and art students, employing a wide range of environmental arts and visual arts approaches. Art and art education were applied to analyse the values, emotions and expectations projected onto the Fell (Jokela, 1999). In 1998, the University of Lapland organised a trip to the Arctic Ocean in cooperation with various museums and centres for environmental studies in Norway, along with local tourism businesses. In the project entitled Ultima Thule (Jokela & Kuuri, 1999), thematic studies of landscapes gained depth from the interdisciplinary nature of the project, in which visiting experts in the fields of geography, natural science, tourism studies, art history, the literature of Lapland and Northern cultural history participated.

Art education students participated in thematic studies on the Northern landscape in the international summer schools in which environmental art and performance art in nature were used as methods for developing a sense of place and expressing the experiences related to such a place. Some students gathered research data on the summer schools, which they used to analyse the experiences involved (Kivelä, 2001), whilst some students interviewed artists and analysed the artworks created in the summers schools (Tyni, 2003). Further on, art education continued, and thematic studies and approaches to art education were developed by designing and facilitating art workshops for high school students. For example, Huhmarniemi and Lampinen (2002) studied place experiences on river shores during a week-long art camp. In the context of the fells, art education students planned and partly carried out the design for the current landscaping of the ski slopes of the Levi Winter Resort (Fig. 2). They also explored general possibilities for incorporating environmental art into tourism initiatives. The potential of art and tourism collaboration was later studied more extensively by art education researchers (Huhmarniemi & Jokela, 2019). The contribution of these two case studies towards the development of ACE was the notion of the meaningfulness of interdisciplinary collaboration, including art and science dialogue. Importance of bodily presence and physical activities in the landscape were also recognised and applied to several environmental art workshops carried out as part of the ACE studies.

In 2002, the University of Lapland Faculty of Art and Design began a long-term project to study winter and 'winter art'. The project received funding from a number of external sources for the purpose of supporting livelihoods and sustainable development in Northern Finland. Some of those projects brought international artists and designers to Finnish Lapland, and some were conducted abroad. Winter was studied as a cultural phenomenon that influences all aspects of life in Northern Finland, including holistic well-being, people's emotional and mental landscapes, literature, the visual arts, children's culture and design and architecture (Härkönen et al., 2014; Huhmarniemi et al., 2004; Jokela, 2007a,b). Some of the outcomes of this project included international snow and ice sculpting and architecture events, snow building and the development of art education and art teacher training initiatives. For example, in 2003, a project called Underwater World, carried out in Rovaniemi in collaboration with the international art event titled 'The Snow Show', engaged art education students in teaching pupils from multiple grade levels as well as the children of Rovaniemi Art School. The pupils sculpted an underwater world within a snow labyrinth, which was made using different snow construction techniques (Fig. 3). In addition to gaining teaching experience, the art education students learned project organisation and outdoor education methods delivered through the arts. The case study impacted vastly on ACE-studies. Various winter art workshops were added to ACE curriculum and carried out in snow hotels and Northern village communities. Focus was also laid on teaching project administration.

From 2004 through 2006, Hiltunen led a long-term community-based art and art education project the Firefox, in Utsjoki the northernmost municipality in Finland. Various artistic methods (e.g. winter art) were applied as part of this project, which focused on dialogue, collaboration and the sense of communality amongst Finnish- and Sámi-speaking communities in the village. One of the aims of the project was to foster equal learning opportunities in this region, where communities are separated from each other by long distances. Meanwhile, the accompanying research tackled community-based art education in Northern socio-cultural environments, with the goal of developing community-based art education theory and practice in sparsely populated northern areas (Hiltunen, 2009, 2010). The research offered insights into how community-based art education can strengthen situated learning and social dynamics, which are sustainable within multicultural communities. The activities brought together different age groups, sectors and actors to develop their artistic learning and working culture, whilst expanding the domain of art education into different segments of society. Through its action research-based mode, the scholarly examinations related to the socio-constructive learning and phenomenological–hermeneutic paradigms as well as to pragmatic and critical research (Hiltunen, 2009, 2010). The project was followed by several other educational development projects and initiatives that continue to

Fig. 2. Art Education Students Landscaping Ski Resort In the context of fells
Source: Timo Jokela, 1997
Note: Art education students carried out an interdisciplinary and intensive art course for high school students. Environmental art was applied into the landscaping of traces left by the construction of the ski resort.

Fig. 3. Underwater world in Rovaniemi
Source: Virpi Valkonen, 2003.

date. One of these is the international research project entitled Acting on the Margin: Arts as Social Sculpture (2020–2023). This project is being funded by the European Union, as development of educational cultures in remote communities has relevance not only for other Arctic communities, but also for regionally remote communities throughout Europe. ACE project studies are integrated into testbeds for theses research projects, giving possibilities for students to collaborate with remote communities as well as connecting to international research in art education and community arts.

Art education students participated in the development project in Utsjoki by teaching art workshops for school-aged children, kindergarten communities and the elderly (Fig. 4). The participation of these university students enhanced their identity as art educators within the realms of the general school system and informal art education, which cover the areas of social services, healthcare and cultural sustainability (Hiltunen, 2009). Meanwhile, Piia Juntunen (2007) completed her master's thesis on integrating art and science teaching, which involved a snow sculpting project for high school students. Since then, the collaboration of art and science has continued to be a development target in ACE studies.

In a 2005 book based on an online study, several starting points for ACE creative methods were suggested, namely, utilising natural resources and materials, such as snow and ice, water, sand and waste items (Jokela et al., 2005). The authors further explained that natural materials can be gathered, categorised and arranged for artistic expression and that many can be assembled in a variety of ways. For example, tree trunks, boughs, twigs and tree stumps can be manipulated to create large pieces of environmental art. Such techniques can also be guided by observing elements of nature (e.g. streams, wind and fire) and by making natural processes visible and tactile through artistic and pedagogical approaches. One of the main outcomes of the methods proposed was a Nordic-Russian art event called Trans Barents Highway (2003–2004), in which artists travelled for a month, creating environmental art with local community members from municipalities situated along the road from Northern Russia to Northern Norway. Public art was made from found objects and natural materials available at sites near the road (Jokela et al., 2004). Ten years later, the focus shifted from using elements of nature as materials to having elements of nature as partners or complementing nature through artistic activities and artworks. For example, art education graduate Eira Ainalinpää completed her doctoral study on floral art and investigated how art can be used to concretely influence environmental matters at the local level. Her dissertation included environmental art, specifically floral art involving butterflies and a number of other insects (Ainalinpää, 2009).

Ainalinpää's (2009) dissertation refined the idea of promoting the equality of humans and nature through individual and communal protection measures. In the artistic element examined in her work, *Art-arboretum*, she focused on endangered rural plants and the conservation of the environments of insect pollinators (Ainalinpää, 2009). A similar topic was discussed in 2019 by Huhmarniemi, who focused on incorporating the practical implications of post-humanistic thinking into art-based environmental education in the Meadows and Wood-Pastures project as part of the 2019 International Socially Engaged Art Symposium 'In Nature'. Huhmarniemi (2019b) worked with Finnish conservation biologist and landscape ecologist Kaisa Raatikainen, Chilean choreographer and dance educator Hugo Lagos and schoolteachers and pupils from a countryside village in Southern Finland. The team visited a local dairy farm and studied human and animal interactions in the surrounding agricultural landscape, including both intensively cultivated fields and highly endangered and biodiverse dry meadow habitats. The idea of creating art based on these interactions with farm animals led to a playful practice wherein the cows' behaviours and gestures were observed and imitated through human body language (Raatikainen et al., 2020). The agency of natural elements was also observed in a flower meadow by learning the mechanisms by which plants spread their seeds. One of the art interventions that emerged from the workshop, which was acted out in a schoolyard, involved spreading the seeds of meadow plants to create a school meadow. During the performance, participants wore crowns that they had made from willow branches and decorated with plant stems; the crowns symbolised the power that humans have to act well in nature and for nature (Huhmarniemi & Juhola, Forthcoming). The collaboration between international artists, researchers, artists–researchers, local school teachers and pupils enhanced mutual learning on educational encounters interwoven into art events (Huhmarniemi, 2019b; Juhola et al., 2020).

Doctoral candidate Katja Juhola develops and studies the the International Socially Engaged Art Symposium in her doctoral degree (Juhola et al., 2020; Raatikainen et al., 2020; Huhmarniemi & Juhola, Forthcoming). Similar international intensive workshops are developed and researched in Northern communities in the context of ACE-studies (Härkönen & Stöckell, 2019; Härkönen & Vuontisjärvi, 2018; Härkönen, Forthcoming).

Fig. 4. Firefox project in Utsjoki in 2005
Source: Mirja Hiltunen.

3. Analysis: paradigm shift from environmental aesthetics to contemporary theories

In the 1990s, the philosophical basis of ACE studies was focused on a humanistic environmental philosophy. The significant questions for art education regarding the beauty of the environment, environmental art and aesthetic experiences highlighted humanistic perspectives on the environment, which belonged to the field of environmental aesthetics. (The environment is understood in accordance with the definition provided by philosopher and environmental aesthetic Arnold Berleant [2014]: there is no such thing as an environment that is independent from humans or a human who is not part of their environment.) However, environmental crises have challenged the humanistic understanding of humans, inspiring the need to exceed human-centredness and develop empathy and respect for non-human elements found in nature (Plumwood, 2002). Post-humanistic thinking aims to avoid the notion that the environment is merely a resource; rather, the agencies and rights of living and non-living nature should be considered simultaneously (Datta, 2016; Malone, 2016). The agency of nature is self-evident for children who closely engage with the outdoor environment, but it can be retained to adulthood; in fact, this is a common feature of traditional knowledge amongst the people living in Lapland (Huhmarniemi et al., 2020). On one hand, the people in Lapland can consider that a fell, the sea or a tree are their friends and, therefore, require their protection. On the other hand, locals do not necessarily demand absolute protection of nature, as many obtain their livelihoods from the industrial use of natural resources. Thus, environmental conflicts are common in Northern Finland (Jokinen, 2019) and in the whole

Fig. 5. Environmental art created from stones by student Heli Hautala as part of 1997 fell Project
Source: Timo Jokela

Arctic region.

Since the 1990s, art-based environmental education has emphasised the sense of community and place, which involves social and cultural layers of the environment. Humanistic geography, particularly its concept of place, has also influenced ACE operations. A place is understood as a physical and socio-cultural space, which consists of layers of histories, memories and experiences as well as told and imagined dimensions (Karjalainen, 2006; Relph, 1986; Tuan, 1977). Nature is a rich learning environment full of materials that are suitable for artistic practices, allowing the content areas of art to be implemented in accordance with the objectives of the curriculum. Students in ACE studies have been guided to adapt the most diverse natural materials and to experiment with multiple building techniques and methods of expression based on an investigative approach hinged upon independent and group work (Jokela, 2008; Hiltunen, 2009).

Place-based learning is sometimes misunderstood as the opposite of learning in relation to global environmental crises, such as climate education. Particularly when working with children, the space of education starts in the local environments and communities and then extends to networked locations, even if the operations have content related to global environmental crises (see e.g. Huhmarniemi, 2018; Huhmarniemi & Jokela, 2020a,b; Stoll et al., 2018; Stöckell, 2015). Many key supporters of ecoactivist art (Demos, 2017) and the so-called 'ecosocial education' (Martusewitcz, 2019) have emphasised the role of local community and locality as a starting point for significant and influential operations. ACE studies focus on place-based strategies and art education aimed at guiding children to express their relations to the local environment and culture.

Within the scope of contemporary art, new materialism has become a philosophical background ideology, which has been intensively discussed in the literature (Fox & Alldred, 2019; Gamble & Hanan, 2019). In some ways, new materialism is a parallel theoretical and methodological approach to post-humanism (Ferrando, 2013). In art and artistic research, new materialism entails focusing on the materialistic, sensory and aesthetic dimensions of art whilst detaching oneself from its excessive conceptualisation, formalism and autonomy. The functionality, skills, materialism and sensory experiences of art are emphasised in ACE studies. This programme is about not just adapting art but also offering art as another method of knowledge and existence in which agency and tacit knowledge are present. The ACE ideology, which is orientated towards the Northern and Arctic arts (Huhmarniemi & Jokela, 2020a,b; Jokela, 2013; Jokela & Coutts, 2018), can be studied from the perspective of new materialism in two ways. First, environmental art materials, such as earth, stones, plants, snow, water and so on, are directly sourced from nature. These are sensed and processed with the body and transformed into new experiences by adults and children with the help of art and methods similar to play, respectively. Second, new materialism is related to the Northern ecoculture wherein the forms of culture and situated knowledge, implied knowledge and Indigenous knowledge (see, e.g. Helander-Renvall & Markkula, 2017; Porsanger & Guttorm, 2011; Valkonen & Valkonen, 2018) guide the use of natural materials in a social and communal manner.

Discussions about the colonisation of the Northern and Arctic regions and deconstructing its effects challenge us to consider the colonial characteristics of Western concepts of knowledge and learning (Kuokkanen, 2000; Smith, 1999). Gunvor Guttorm (2015), a Sámi researcher, considered the importance of reforming Sámi art and handicrafts with the help of her own art and design production, whilst education researcher Pigga Keskitalo (2010) emphasised the importance of working outdoors in decolonial Sámi pedagogy and school culture. Similarly, Australian environmental education researchers Alisia suggested that social cohesion and interaction with non-human nature in a post humanistic spirit should be supported in decolonial education. They based their thoughts on the human–nature relationship typical to native people, on ecological knowledge and on a cosmic world view, while considering learning methods derived from children's games, thus extending the conceptual method of knowledge (Flynn & Reed, 2019).

In international art education debates concerning the Arctic regions, discussions on revitalisation and decolonisation have been raised (Cunsolo et al., 2017; Huhmarniemi & Jokela, 2020a) in an attempt to revive already forgotten or hidden cultural practices and symbols as part of contemporary culture. In ACE studies, revitalisation has promoted intergenerational interactions in both community-based art education (Hiltunen, 2009, 2011) and in contemporary art, which is based on the tradition of handicrafts (Härkönen et al., 2018; Huhmarniemi & Jokela, 2020b). Such traditional handicraft methods have been used as starting points for cultural revitalisation in which elderly people and children, for example, can share both their tacit knowledge and experiences about modern life through artistic work.

In addition to economic, ecological and social sustainability, ACE studies also target cultural sustainability. Cultural vitality, respect for traditions, cultural resilience and ecocultural civilisation are some of the key principles germane to cultural sustainability discussions (Härkönen & Stöckell, 2019; Soini & Birkeland, 2014). In art education research, we need to ask how art and education can be used to strengthen and support resilience and ecocultural civilisation, respectively. Resilience refers to the opportunity to adapt to change, which can be harnessed by an individual, community or even a natural entity (e.g. a forest). Various disturbances and crises can be viewed as opportunities for change; thus, resilience is related to the emphasis on learning. Discussions on ecocultural education highlight the essentiality of deep-reaching transitions to human values and lifestyles for ensuring sustainable development. The significance of empathy, moderation, sense of community and trust

in achieving sustainability goals are underlined by education philosophers (Salonen, 2019; Värri, 2018).

4. Discussion: the next steps

Since their inception, ACE studies have been implemented based on the principles of project-based learning. Over the years, these studies have resulted in dozens of environmental and communal art development and research projects (Jokela, 1997, 2008). These projects were not only designed to train future art teachers to implement project activities as phenomenon-based learning – they also served as a means for uniting all subjects within all levels of education, the informal education system and community arts. For instance, in the University of Lapland, in the Arctic Art and Design programme, the focus is on training the student to work as community artists engaged in regional development (Coutts et al., 2018; Härkönen & Vuontisjärvi, 2018). Project-based situated learning aims to step away from teacher-led learning situations and enhance the learners' individual agencies. Furthermore, in project learning, art teachers and community artists design the learning situations based on their own pedagogic skills. They also integrate relevant themes into the studied subjects whilst considering the objectives of the participating groups and individuals. As a means of working outdoors, ACE studies provide learning processes to satisfy and develop participants' curiosity and agency, respectively.

Since the 1990s, ACE studies have focused on creating art in nature utilising with materials found in nature. The projects have, thus far, emphasised the importance of bodily relation to the materials (Fig. 5). Thus, ACE could have been described as a form of new materialism even before this term became well-established in academic debates and theorised in research on ACE studies.

The most remarkable change in ACE can be identified in relation to post-humanism. Humanistic thinking, especially the concept of a 'place' (Karjalainen, 2006; Relph, 1986; Tuan, 1977), is an essential humanistic idea that has influenced the design of ACE projects. The multi-sensual experiences within a space, combined with the narrative and historical dimensions, have inspired numerous ACE studies and projects. Meanwhile, post-humanistic thinking has shifted the focus of ACE initiatives towards greater collaboration with nature and the idea of serving nature. The paradigm shift is also reflected in the works of other contemporary artists who have elevated elements of nature as co-artists and partners, along with machines and other objects (e.g. Bissell, 2020; Latva-Somppi et al., 2020; Närhinen, 2020). Forthcoming cycles in ACE studies and art teacher training should continue to reform educational practises informed by post-humanistic thinking.

The shift towards a greater focus on agency of nature is evident in the use of such concepts as *ecosystem services*, particularly *cultural ecosystem services*. Ecosystem services (Milcu et al., 2013) is a concept that is used to help recognise the values provided by natural ecosystems. The concept of ecosystem services can be associated with environmental art that has made natural processes, such as stream and wind, visible. In 2020, the emphasis shifted to cultural ecosystem services, referring to the 'non-material benefits obtained through spiritual enrichment, cognitive development, reflection, recreation, education, and aesthetic experiences' (Millennium Ecosystem Assessment, 2005, p. 4). The tension between ecosystem services-thinking and post-humanistic philosophy is evident: on one hand, the concept of ecosystem services aims to concretise how nature serves mankind; on the other hand, the other ecosystems also serve the planet in which we live.

The tension between ACE projects and post-humanistic thinking is also evident in large-scale environmental art. Many past ACE artworks were created using rather massive amounts of materials, such as snow and ice in snow hotels, for example. Many of the sculptures made of wood or willow are also large in scale. In ACE activities, collaboration and interaction with natural materials and nature's processes have been promoted; however, for other projects focused on environmentalism and environmental protection, the use of natural materials in large-scale

Fig. 6. Art Education Students Making Sculpture Using Willow Branches in 2006

Note: The branches were taken from a willow tree. This fast-growing tree is commonly considered a somewhat untoward plant found on meadows and along roads.

Source: Timo Jokela

artworks may seem questionable (Fig. 6), especially for international audiences who are not used to interacting bodily with elements of nature and natural materials.

In Northern local ecocultures in which the use of nature (fishing, picking and forest industry) is an essential part of the cultural heritage, we can find the concept of ecosystem services useful. Recent studies on the ACE concept (Jokela & Huhmarniemi, 2020) have expanded discussions on sustainable and renewable economies when combining arts-based methods and environmental art and place-based developments methods (Vodden et al., 2015). We argue that studies in sustainability education in the Northern and Arctic regions must increasingly consider the potential impacts of cultural ecosystem services and the arts on economic sustainability. The impact of art teacher training is not necessarily limited to schools: it can extend to regional, community and even local economies.

The revival of the ecoculture has been fostered through ACE projects since the 1990s (Fig. 7). In these projects, revitalisation has focused on the use of local materials and traditional working methods and tools (Jokela et al., 2005) and has been promoted by sharing stories and beliefs through public art (Härkönen et al., 2018; Hiltunen, 2010; Huhmarniemi & Jokela, 2019). The change in such rejuvenation efforts can be seen in the new focus on knowing with nature, which is inspired by post-humanistic thinking. The concept of the *Northern knowledge system* is now used to describe tactile, situated understanding and knowledge communicated in material cultures and visual symbols (Huhmarniemi & Jokela, 2020b). It incorporates cultural heritage and the tacit comprehension of material culture in the creation and use of arts and crafts and in the creation of visual symbols of crafts as a language. Future ACE studies can include the objective of sharing Northern knowledge with Finnish and international participants by inviting students (from Southern Finland and abroad) to join in collaborative efforts with people living in the villages, by learning cultural practices carried out in the Northern and Arctic regions and by targeting immigrant communities and tourists as participants. In relation to these, further research on cultural encounters as part of revitalisation is needed.

Meanwhile, increasing eco-anxiety poses challenges to art education and art teacher training. Hence, it is important to respond to eco-anxiety to ensure that future teachers have the tools and skills needed to transform anxiety into a striving force of environmentalism. In addition to climate change and the sixth mass extinction, local and long-term environmental degradation can cause eco-anxiety. Thus, conflict

Fig. 7. Hay-Making and Environmental Art Installation of Hay by Timo Jokela as Part of 1995 River Project.
Note: The working methods and the choice of material for this project are tradition-bound and, consequently, pay homage to the place and its history. It also represents the value of landscape protection. For hundreds of years, hay-making has been a dominant feature in the landscape of the Ounasjoki. Nowadays, the open, sunny fields have almost totally disappeared, as the meadows are being overtaken by trees and other plants.
(Source: Timo Jokela).

mediation can be a new field in which ACE studies in Northern and Arctic communities can be applied. The planning of such research cycles is already underway.

Eco-anxiety is worsened by the insufficiency of personal or community actions to protect the environment (Pihkala, 2018). As the Arctic regions warm up more quickly than the rest of the world, the worry about climate change is fast becoming a concrete threat in the North. People who have a close bond to ecosystems due to their livelihoods are at particular risk of experiencing eco-anxiety, in addition to children and young people (see e.g. Pihkala, 2018); thus, people in the North are also at risk. In relation to this, ACE projects can alleviate eco-anxiety and enhance happiness associated with bodily and interactive relations with nature. In addition, we argue that understanding and awareness of the concept of ecosystem services can help prevent eco-anxiety; that is, awareness of nature's ecological processes and services can increase respect for them, enhance actions and promote sharing and knowing with nature in a post-humanistic manner.

According to Panu Pihkala (2018), an ecotheologist who has studied eco-anxiety, although the space for processing grief, loss and threats must be allowed, the emphasis in education should be on action and hope for the future. It is essential that the solutions of environmental problems are not processed merely as the lifestyle choices of an individual, because an increase in the sense of hopelessness may occur if the possible solutions are highly insignificant. Instead, individuals should learn about the importance of participation and social influence. According to Pihkala (2017), the strength of art-based environmental education is the opportunity for deep existential and spiritual experiences, which are in touch with the body and mind, along with profound ideologies and emotions. Since the 1990s, ACE studies have emphasised the importance of actions, dialogues and participatory processes; however, their potential in terms of alleviating eco-anxiety has yet to be fully evaluated.

With the paradigm shift to post-humanism, Indigenous cultures have inspired educators to develop transformative environmental education (Flynn & Reed, 2019) and have encouraged art theorists to call for further learning from Indigenous cultures (Demos, 2017). Ecological knowledge and nature as sources of healing and spiritual experience must be highlighted. Northern cultures and communities, such as the Sámi people, have retained characteristics in their environmental cultures wherein animals, rivers and rock areas, for example, are considered to have agencies (Pentikäinen, 2018). Indeed, the arts have a central role in this movement, whilst dance, singing, drumming and performative rites are practised as forms of spiritual exercises. Spiritual experiences in nature have the potential to enhance human–nature connectedness (Lumber et al., 2017). At the same time, it is important to acknowledge that according to many nature religions, nature also has destructive power. Based on such an idea, it is possible to believe that nature can also take revenge against errant human behaviours. In ACE studies, this kind of belief has not been presented.

5. Conclusion

Art-based environmental education in art teacher training at the University of Lapland in the 1990s was implanted as environmental art and community art activities following the principles of place-based and situational learning (Jokela & Hiltunen, 2014). Alongside place-specificity, the concept of education towards sustainable development was raised in the 2000s (Jónsdóttir, 2017, p. 355), particularly towards cultural sustainability in Northern communities where cultural diversity is typical due to, for example, the Sámi culture.

Currently, following and leading the paradigm shift from humanism to new materialism and posthumanism, many artists and art researchers endorse a post humanistic relationship with the environment. Artists globally embrace nature as a co-artist and partner. However, the post humanistic philosophy was not initially at the core of ACE operations: focus in the field's infancy was on the environmental aesthetic experiences, then more on landscapes, places and the relationship between people, nature and cultures. Indeed, the post humanistic method of arts-based environmental education represents a relatively new approach, which interlinks with ecosystem services-thinking and decolonial education. In Northern ecocultures, people have strong relationships with the earth, as the Northern animistic understanding of the world includes the interaction between animals and people as well as common fate. In the context of ACE operations, the Northern ecoculture provides an opportunity to consider human and non-human nature as equals.

In the age of global environmental crises, art education and ACE studies can help to release eco-anxiety and increase educators' capacities in facilitating transformative experiences and in enhancing sustainability in communities. The content of ACE can also be associated with local ecocultures and lead to the revitalisation of traditions and the redefinition of values. The ACE field of study can be described as thinking globally but acting locally in collaboration with international networks, community partners and elements of nature.

Declaration of competing interest

No conflict of interest to disclose.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ssaho.2021.100181.

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